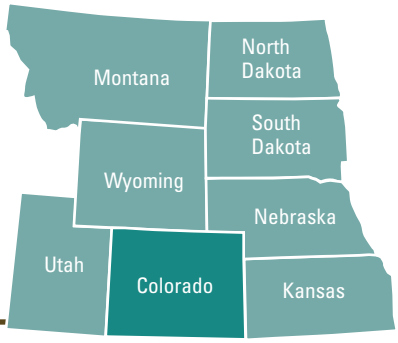
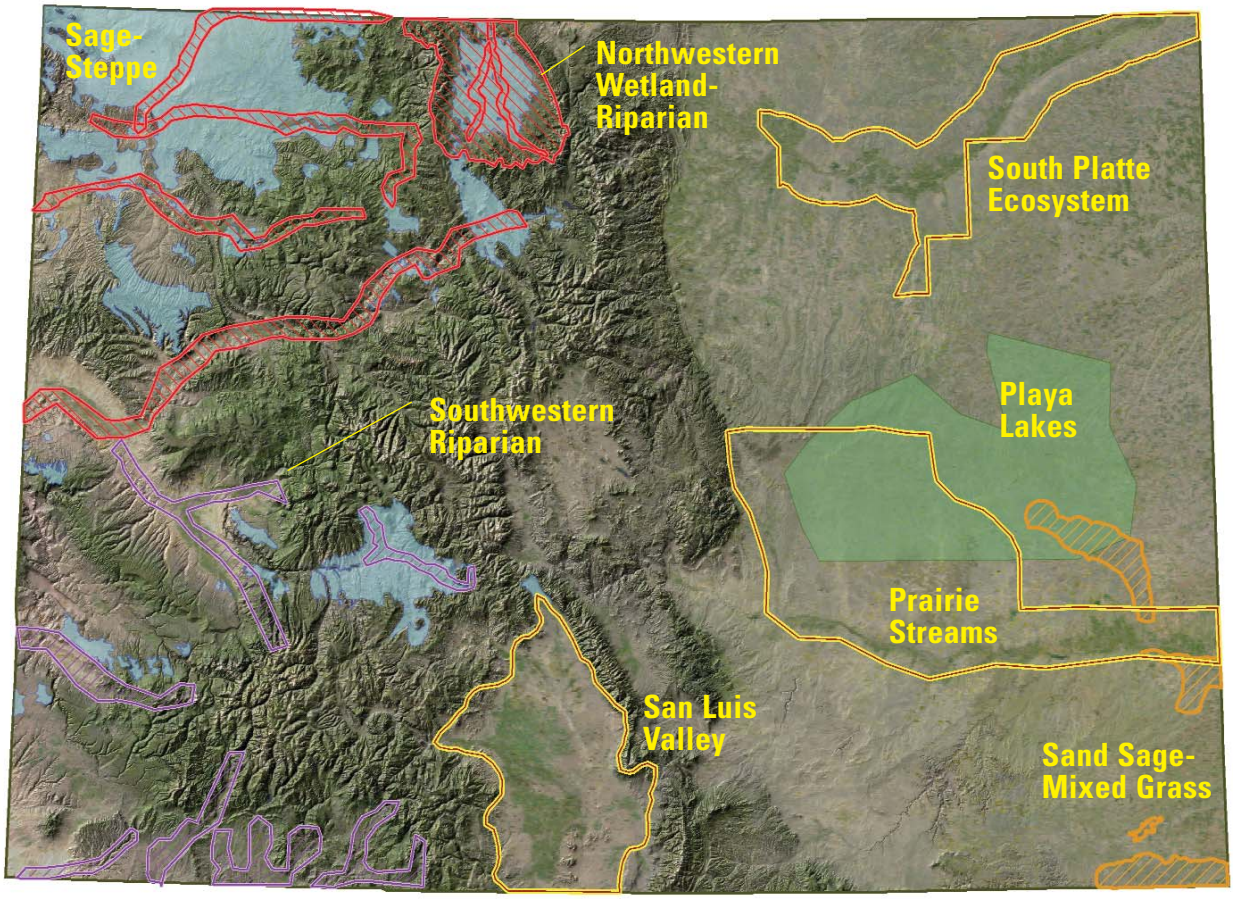
Colorado





Colorado Partners Program Conservation Focus Areas

Introduction

To develop Colorado's Partners Program focus areas, critical resource needs were evaluated in relation to many other issues and concerns: opportunities to prevent or reverse habitat fragmentation, synergism with existing or potential partners, threat analysis, and support for National Wildlife Refuge System lands in relationship to Colorado's private lands. Information relating species and habitat occurrences, priority areas for conservation, and presence of potential local partnerships were obtained from the Colorado Division of Wildlife, Colorado Natural Heritage Program, The Nature Conservancy, Ducks Unlimited, and statewide and local land trusts. Colorado's *Comprehensive State Wildlife Conservation Plan*, in particular, was used to help guide the planning process. The plan identifies 205 species as meeting the criteria for inclusion as Species of Greatest Conservation Need. Additionally, Colorado Partners Program field biologists participate in a wide range of local working and planning groups. Information from these more localized sources was integrated into the national, regional, and statewide data.

Colorado is home to 29 plant and animal species listed as threatened or endangered under the Endangered Species Act, and 10 species identified as candidates for listing. The Colorado Natural Heritage Program lists 132 species and natural communities as Globally Critically Imperiled (G1) or Imperiled (G2), and 681 species and natural communities as State Critically Imperiled (S1) or Imperiled (S2). Colorado is within portions of the Central and Pacific flyways, and the state provides important nesting and stopover habitat for many migratory bird species.

Although much of Colorado is in state or federal ownership, nearly two-thirds or 38,679,947 acres (60,437 square miles) are in private or local government ownership. It is the intersection between private land ownership and habitat for species in need of conservation action which provides the primary filter and foundation for Partners Program restoration efforts in Colorado. The Executive summary of Colorado's Comprehensive State Wildlife Conservation Plan (Colorado Division of Wildlife 2006) states that, "…the landscape of eastern Colorado — eastern plains river and stream systems (including riparian), tallgrass and midgrass prairie and sagebrush — were judged as being among those in the poorest condition to support native species…" Several of the Colorado Partners Program focus areas reflect agreement with the State's conclusion.

Input on general Partners Program direction and future activities was solicited from key partners in a comprehensive 2004 stakeholder meeting. Survey participants are included in Appendix A.

Geographic Focus Areas

Sage-Steppe Focus Area

Working cooperatively with private landowners is paramount to ongoing success in this conservation focus area. Ensuring that each habitat project meets landowner goals, as well as the specific habitat requirements of target wildlife species, provides for continued accomplishments. At present, two Partners Program field biologists are responsible for implementing projects in this focus area.

The mosaic of various sagebrush age classes provides maximum benefits to a wide range of sagebrush obligate species. Photo by Bob Timberman, USFWS.

The majority of the Sage-Steppe Focus Area is located west of the Continental Divide; the primary exception to this is Jackson County, commonly referred to as North Park. Sagebrush rangelands are located sporadically throughout all of western Colorado. Sage grouse (both Greater and Gunnison) are considered the marquee species for this habitat type.

Male sage grouse within preferred sagebrush-steppe habitat. Photo by Bob Timberman, USFWS.

The distribution and abundance of sage grouse has markedly decreased in recent times, and the species has been extirpated from at least three states and one Canadian province. Sage grouse populations have exhibited long-term declines in this area, declining by 33% over the past 30 to 40 years (Braun 1998). Focus will also be placed on other sagebrush obligate species, including sage thrasher, Brewer's sparrow, and sage sparrow. In addition, Partners Program projects that specifically benefit these obligate species will benefit a wider suite of federal trust species and state species of concern, including northern harrier, vesper sparrow, black-throated sparrow, and kit fox. Other species, typically noted with a more moderate association with sagebrush, will benefit as well, including green-tailed towhee, lark sparrow, and Merriam's shrew (Colorado Division of Wildlife 2005).

The restoration of diverse age classes of sagebrush, enhancement of wet meadows, and removal of encroaching pinyon juniper woodlands are thus far the main emphasis of program efforts. Some greater sage-grouse research points to the majority of nesting (70-80%) and early brood-rearing occuring within three miles of lek sites (Bradbury, Vehrencamp, and Gibson 1989; Wakkinen, Reese, and Connelly1992); the program tries to concentrate efforts within this "circle of maximum influence."

Nesting cover objectives include stands of sage with a good

grass/forb understory, generally averaging greater than 20 inches in height (Peterson 1980) and canopy cover of sagebrush around nests ranging from 15 to 38% (Colorado Division of Wildlife 2005).

Habitat restoration/enhancement techniques include grazing management, native grass/forb interseeding, and various mechanical treatments to produce small, irregular shaped openings within stands of heavy canopy sagebrush habitats.

Typically, wet meadows are enhanced by construction of small levees and installation of various irrigation and water control structures. Seeding native forbs along the sage/wet meadow interface is also a commonly used habitat enhancement technique.

Priority Species

- Greater sage-grouse
- Ferruginous hawk
- Northern harrier
- Sage thrasher
- Green-tailed towhee
- Brewer's sparrow
- Vesper sparrow
- Lark sparrow
- Black-throated sparrow
- Sage sparrow

Sage-Steppe Focus Area Five-year Targets

Habitat

- Upland Restoration/Enhancement: 15,000 acres
- Wetland Restoration/Enhancement: 1,200 acres

Partnerships

- New landowner partners: 75
- Other new partners: 15
- Amount of technical assistance: 125 staff days
- Percentage of leveraging (ratio Service to Partner): 1:3

Related Plans

- North American Waterfowl Management Plan (USFWS)
- United States Shorebird Conservation Plan (USFWS)
- North American Waterbird Conservation Plan (USFWS)
- North American Bird Conservation Initiative (USFWS)
- Colorado's Comprehensive Wildlife Conservation Strategy (Colorado Division of Wildlife)
- Partners in Flight (Rich et al. 2004)
- Southern Rocky Mountains: An Ecoregional Assessment and Conservation Blueprint, September 2001 (Neely et al. 2001)
- A Conservation Assessment of the Colorado Plateau Ecoregion
- Colorado Important Bird Areas Program
- Greater Sage-grouse Statewide Conservation Plan (in progress)
- Gunnison Sage-grouse Rangewide Conservation Plan
- WAFWA MOU National Sage-grouse Habitat Conservation Strategy
- Intermountain West Joint Venture Coordinated Bird Conservation Plan
- Northern Eagle and Southern Routt Greater Sage-grouse Conservation Plan
- Northwest Colorado Greater Sage-grouse Conservation Plan

Southwestern Riparian Focus Area

This conservation focus area targets habitat on all private and tribal lands in an area extending south from the Colorado River to the New Mexico state line, and west of the Continental Divide to the Utah state line. It includes the watersheds of the San Juan, Los Pinos-Piedra, La Plata, Mancos, Disappointment Creek, Uncompahgre, and Upper and Lower Gunnison rivers.

The program strategy is to take a science-based, ecological approach that addresses critical parameters affecting wetlands throughout southwestern Colorado. The strategy involves three basic components. The first component has several parts: recognizing the diversity of wetland types and the varied environmental processes that support and maintain those wetlands; using a landscape-scale approach that evaluates the varying wetland types comprising wetland complexes of individual watersheds; and delivering projects such as grazing management, wet meadow enhancement, hemi-marsh restoration, as well as employing other restoration techniques to benefit wetland complexes in the watershed. Wetland complexes vary greatly throughout southwestern Colorado and the program has evolved to meet these varying needs.

Secondly, the Partners Program recognizes that wetlands provide habitat for a majority of the region's wildlife species (90% of Colorado's wildlife species use wetlands at some time during their life cycle). Wetlands are one of the most productive and diverse communities within the arid landscapes of southwestern Colorado and thereby warrant significant investment of the program's attention. The program targets the restoration, enhancement, and establishment of wetland habitat to offset the estimated 10 million acres of wetlands lost in Colorado since pre-settlement times (Dahl 1990).

Thirdly, riparian wetlands are distinctly dependent on the hydrology and associated ground water table of the watershed. Declining ground water tables are a significant threat to wetlands and riparian vegetation. The program addresses threats to ground water tables of riparian corridors by installing a variety of water control structures designed to keep water tables at historic levels, thereby supporting wetlands and native riparian vegetation.

Declining native fish populations have become a recent emphasis of the program. The program works closely with various government entities and nongovernmental organizations to identify habitat needs of native fishes. Fish barriers are installed on private land to protect existing populations of Colorado River cutthroat trout from hybridization with non-native trout. The program also realizes opportunities to work with plains native fishes such as the Colorado pike minnow, humpback chub, and razorback sucker by altering irrigation diversion structures which are currently impeding upstream movement by these species.

Priority Species

- Mallard
- Cinnamon teal
- Northern pintail
- Wilson's phalarope
- Yellow-billed cuckoo (Candidate)
- Southwestern willow flycatcher (Endangered)
- Colorado pike minnow (Endangered)
- Humpback chub (Endangered)
- Razorback sucker (Endangered)

Wetland restoration projects benefit nesting waterfowl, such as this northern pintail hen. Photo by Rick Schnaderbeck, USFWS.

Southwestern Riparian Focus Area Five-year Targets

Habitat

- Upland Restoration/Enhancement: 1,500 acres
- Wetland Restoration/Enhancement: 3,000 acres
- Riparian/Stream Restoration/Enhancement: 46 miles
- In-stream Structures: 52

Partnerships

- Landowner partners: 50
- Other partners: 15
- Amount of technical assistance: 125 staff days
- Percentage of leveraging (ratio Service to Partner): 1:3

Related Plans

- North American Waterfowl Management Plan (USFWS)
- United States Shorebird Conservation Plan (USFWS)
- North American Waterbird Conservation Plan (USFWS)
- North American Bird Conservation Initiative (USFWS)
- Colorado's Comprehensive Wildlife Conservation Strategy (Colorado Division of Wildlife)
- Partners in Flight (Rich et al. 2004)
- Southern Rocky Mountains: An Ecoregional Assessment and Conservation Blueprint, September 2001 (Neely et al. 2001)
- Colorado Important Bird Areas Program
- Southwestern Willow Flycatcher Recovery Plan
- Conservation Agreement and Strategy for Colorado River Cutthroat Trout (*Oncorhynchus clarki pleuriticus*) in the States of Colorado, Utah, and Wyoming
- Southwestern Wetlands Focus Area Committee Strategic Plan
- Intermountain West Joint Venture Coordinated Bird Conservation Plan
- The Gunnison Wetlands Focus Area Strategy

Northwest Wetland-Riparian Focus Area

Riparian and wetland resources are of particular importance to much of this otherwise arid landscape. This conservation focus area includes the floodplains of the Colorado, White, Yampa, North Platte, and Little Snake rivers, as well as many of the smaller streams within the watersheds. Several of these rivers have relatively unaltered hydrographs which have maintained important riparian and wetland communities in places. The Nature Conservancy and Yampa Valley Land Trust have been targeting riparian areas for conservation easements to protect these valuable habitats. In addition, Arapaho National Wildlife Refuge and Browns Park National Wildlife Refuge are located within the focus area and provide valuable fish and wildlife habitat.

The Partners Program conservation targets for this focus area include the restoration and enhancement of native riparian and wetland plant communities for the primary benefit of migratory bird species. Riparian fencing, wetland restoration, grazing system establishment, and enhancement of native grasses and forbs will constitute the majority of Partners Program efforts. When possible on private lands, projects to restore or protect habitat for native fishes will be pursued.

Priority Species

- Bufflehead
- Western grebe
- Marbled godwit
- Spotted towhee
- Colorado pike minnow (Endangered)
- Humpback chub (Endangered)
- Bonytail chub (Endangered)
- Razorback sucker (Endangered)

Northwest Wetland-Riparian Focus Area Five-year Targets

Habitat

- Upland Restoration/Enhancement: 1,500 acres
- Riparian Restoration/Enhancement: 12 miles
- In-stream Structures: 10

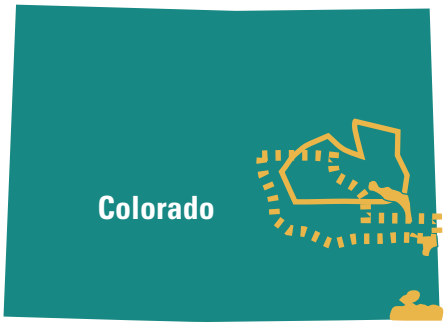
Partnerships

- Number of new landowner partners: 45
- Other partners: 15
- Amount of technical assistance: 125 staff days
- Percentage of leveraging (ratio Service to Partner): 1:3

Related Plans

- North American Waterfowl Management Plan (USFWS)
- United States Shorebird Conservation Plan (USFWS)
- North American Waterbird Conservation Plan (USFWS)
- North American Bird Conservation Initiative (USFWS)
- Colorado's Comprehensive Wildlife Conservation Strategy (Colorado Division of Wildlife)
- Partners in Flight (Rich et al. 2004)
- Southern Rocky Mountains: An Ecoregional Assessment and Conservation Blueprint, September 2001 (Neely et al. 2001)
- Colorado Important Bird Areas Program
- Conservation Agreement and Strategy for Colorado River Cutthroat Trout (*Oncorhynchus clarki pleuriticus*) in the States of Colorado, Utah, and Wyoming

Riparian restoration benefits Colorado cutthroat trout. Photo by Bob Timberman, USFWS.



Southeastern Colorado Focus Areas

The Partners Program focus areas for southeastern Colorado range over a very broad geographical area and address a number of habitat concerns. The geographical area is made up of mostly shortgrass prairie habitat with transitional mixed-grass prairie, sand sagebrush, pinyon pine-juniper forest, greasewood brushland, and riparian forest.

Average annual rainfall varies from 5-21 inches across the landscape. Land use is primarily ranching, haying, and dryland and irrigated farming which presents a diversity of restoration challenges and opportunities.

This area has been divided into three focus areas based on specific target species, critical habitat, landowner interest, and partnership and restoration opportunities. The focus areas are defined as 1) Prairie Streams Focus Area, 2) Sand Sage-Shortgrass Prairie Focus Area, and 3) Playa Wetlands Focus Area. These focus areas overlap to a certain extent and other restoration opportunities exist within their outline which will be pursued over time.

Goals established for each focus area are based on a previous three year average, potential internal and external funding, and projected landowner interest. They additionally reflect that resource issues in three focus areas are being addressed simultaneously.

Priority Species

- Lesser prairie-chicken (Candidate)
- Northern pintail
- Ferruginous hawk
- Mountain plover
- American avocet
- Long-billed curlew
- Burrowing owl
- Loggerhead shrike
- Arkansas darter (Candidate)
- Black-tailed prairie dog

Southeastern Colorado Focus Areas Five-year Targets

Partnerships

- Number of new landowner partners: 50
- Other partners: 15
- Amount of technical assistance: 560 staff days
- Percentage of leveraging (ratio Service to Partner): 1:3

Biological Outcomes: Colorado – Southeastern Colorado Focus Areas

The Partners Program worked with the Playa Lakes Joint Venture to model the biological outcomes of the expected five-year habitat restoration target acres for priority birds. Changes in bird abundance on each habitat type were modeled using bird densities from the literature and specific Partners Program habitat restoration and enhancement activities. Results showed a net gain or loss of priority birds from the anticipated treatments of Partners Program projects within each conservation focus area. Bird numbers expected to be supported by Partners Program projects were compared to regional bird population goals, illustrating the contribution of each conservation focus area to bird population objectives developed for the four major migratory bird initiatives (waterfowl, shorebirds, waterbirds, and landbirds).

Colorado – Southeastern Colorado Focus Areas

Species Used	Habitats Used
Burrowing Owl	CRP – Native
Lesser Prairie-Chicken	Playa – Wet
Loggerhead Shrike	Riverine Systems – Floodplain marsh
Long-billed Curlew	Riverine Systems – Riparian canopy – late successional with understory
Mountain Plover	Riverine Systems – River channel
Shorebirds-Nonbreeding-Wetland	Riverine Systems – Wet meadow
Waterfowl-Nonbreeding	Shortgrass – Few shrubs/low grass
	Shortgrass – Prairie dog town

Estimated Biological Outcomes: Colorado – Southeastern Colorado Focus Areas, 2007-2011								
Species (and Habitat)	**Current Acres**	**Future Acres**	**Carrying Capacity Current**	**Carrying Capacity Future**	**Change in Carrying Capacity**	**% Goal Current**	**% Goal Future**	**Change % Goal**
Shorebirds – Nonbreeding								
Playa – Wet	300.00	448.00	2,220.00	3,315.20	1,095.20	0.12	0.18	0.06
Riverine Systems – Floodplain marsh	25.00	50.00	24.05	48.10	24.05	0.00	0.00	0.00
Riverine Systems – River channel	250.00	250.00	185.00	185.00	0.00	0.01	0.01	0.00
Shorebirds – Nonbreeding Wetland Totals			**2,429.05**	**3,548.30**	**1,119.25**	**0.13**	**0.19**	**0.06**
Waterfowl – Nonbreeding (Fall)								
Playa – Wet	300.00	448.00	128,400.00	191,744.00	63,344.00	1.15	1.71	0.56
Riverine Systems – Floodplain marsh	25.00	50.00	33,400.00	66,800.00	33,400.00	0.30	0.60	0.30
Riverine Systems – River channel	250.00	250.00	12,500.00	12,500.00	0.00	0.11	0.11	0.00
Waterfowl – Nonbreeding Fall Wetland Totals			**174,300.00**	**271,044.00**	**96,744.00**	**1.56**	**2.42**	**0.86**
Waterfowl – Nonbreeding (Spring)								
Playa – Wet	300.00	448.00	128,400.00	191,744.00	63,344.00	0.35	0.52	0.17
Riverine Systems – Floodplain marsh	25.00	50.00	33,400.00	66,800.00	33,400.00	0.09	0.18	0.09
Riverine Systems – River channel	250.00	250.00	12,500.00	12,500.00	0.00	0.03	0.03	0.00
Waterfowl – Nonbreeding (Spring) Wetland Totals			**174,300.00**	**271,044.00**	**96,744.00**	**0.47**	**0.73**	**0.26**

Playa Lakes Joint Venture bird habitat models were used to estimate biological performance of anticipated Southeastern Colorado Partners Program projects for a subset of priority bird species during the 5-year period.

For non-breeding shorebirds, completed projects are expected to support approximately 3,548 use days, which is approximately 0.06% of the population goal for the BCR18 portion of Colorado. Restoration and enhancement actions on these sites will improve the carrying capacity of these sites by more than 1,119 use days.

For non-breeding waterfowl (fall), projects are expected to support approximately 271,044 use days, which is 0.86% of the population goal for the BCR18 portion of Colorado. Restoration and enhancement activities will improve the carrying capacity of these sites by approximately 96,744 use days.

For non-breeding waterfowl (spring), projects are expected to support approximately 271,044 use days, which is 0.26% of the population goal for the BCR18 portion of Colorado. Restoration and enhancement activities will improve the carrying capacity of these sites by approximately 96,744 use days.

Native plains fishes, such as the Arkansas darter, benefit from stream restoration projects such as these. Photo by Katy Fitzgerald, USFWS.

Prairie Streams Focus Area

The Prairie Streams Conservation Focus Area is located in portions of El Paso, Elbert, Lincoln, Crowley, Otero, Bent, Kiowa, Prowers, and Pueblo counties in southeastern Colorado. This area is comprised of mostly shortgrass prairie, complemented by playa basins and stream corridors. The waterways in this area are mostly tributaries of the Lower Arkansas watershed, and range from dry creeks to intermittent and perennial flowing streams. The vast majority of streams are intermittent, with water levels and flows dependent on rainfall and spring run-off events.

Stream corridors play a critical role in the life cycle of grassland dependant species, amphibians, plains native fishes, and neotropical migratory birds. Over 60% of neotropical species use riparian areas in the West as stopover areas during migration or for breeding habitat (Kreuper 1993). There are at least 195 species of birds that are confirmed riparian breeders, according to the Colorado Breeding Bird Atlas (Kingery 2000). Native eastern plains fishes are another group of species linked to these systems. These fishes are believed to be declining because of impacts on eastern plains tributaries. Surface water diversion and dewatering of the Ogallala Aquifer for irrigation and general development are two such impacts. The Arkansas darter, currently a state listed species, is a native eastern plains fish that has been impacted by these activities.

Riparian systems may be impacted by overgrazing, development, fragmentation, diversion, and farming practices. Riparian restoration techniques used by the Partners Program include grazing management, such as fencing, rotational grazing, and employing alternative water sources; in-stream channel stabilization; and removal of invasive species. The desired biological outcome is to reduce erosion, restore hydrology and stream function, and to promote a diversity of plant species and plant structure within the stream, riparian corridor, and associated uplands.

One estimate is that 95% of riparian habitat in western North America has been lost, altered, or anthropogenically degraded (Ohmart 1994).

This focus area targets the tributaries within the Lower Arkansas River watershed known to support, or have the potential to support, native eastern plains fishes. Landowners within this focus area understand the importance of managing riparian areas for the benefit of wildlife and for use in day-to-day livestock operations.

The goals set for this focus area target in-stream restoration potential within southeastern Colorado, and reflect a recent re-emphasis on this resource concern and the need to develop partnerships with private landowners. Additionally, these goals do not consider the strong possibility for grassland and playa restoration within the focus area.

Prairie Streams Focus Area Five-year Targets

Habitat

- Upland Restoration/Enhancement: 150 acres
- Wetland Restoration/Enhancement: 276 acres
- River/Stream Restoration/Enhancement: 14 miles

Primary Partners

USFWS Private Stewardship Grant, USFWS Challenge Cost Share Grant, North American Wetlands Conservation Act, USDA Natural Resources Conservation Service, Colorado Division of Wildlife, Colorado Association of Conservation Districts, Rocky Mountain Bird Observatory, Colorado Farm Bureau, Prairie and Wetland Focus Area Working Group.

Related Plans

- North American Waterfowl Management Plan (USFWS)
- United States Shorebird Conservation Plan (USFWS)
- North American Bird Conservation Initiative (USFWS)
- Colorado's Comprehensive Wildlife Conservation Strategy (Colorado Division of Wildlife)
- Colorado Division of Wildlife Arkansas Darter Recovery Plan
- Partners in Flight (Rich et al. 2004)
- Prairie and Wetlands Focus Area Strategic Plan
- Southern Rocky Mountains: An Ecoregional Assessment and Conservation Blueprint, September 2001 (Neely et al. 2001)
- Playa Lakes Joint Venture Planning Effort (in progress)
- The Nature Conservancy Central Shortgrass Prairie Ecoregional Asssessment
- North American Grouse Management Plan (draft)
- Colorado Important Bird Areas Program

Sand Sage-Shortgrass Prairie Focus Area

The Sand Sage-Shortgrass Prairie Conservation Focus Area is located in portions of Baca, Kiowa, Prowers, and Cheyenne counties in southeastern Colorado. The focus area targets shortgrass prairie, a small area of transitional mixed-grass prairie, and sandy soil areas characterized by sand sage-shrub habitat. Lesser prairie-chicken, and other high priority grassland species, will benefit from grassland management and restoration in this area. This geographic focus area has other fish and wildlife habitat restoration potential, primarily involving riparian and playa sites.

The majority of the habitat impacts in this focus area, within the grassland mosaic, are a result of fragmentation. While this area is still considered rural on a larger scale, it is significantly fragmented in varying land use patterns including dryland and irrigated farming, ranching, wind power development, oil and gas development, and roads and other infrastructure associated with human populations. These represent substantial impacts for species requiring large tracts of unbroken grassland. Both U.S. Forest Service and Colorado Division of Wildlife inventories show a downward trend in many fish and wildlife populations within Colorado. There has been much effort among locally based federal and state entities to improve

habitat for these at-risk species (e.g., lesser prairie-chicken). Anecdotal information from lesser prairie-chicken lek surveys in Colorado conducted by Colorado Division of Wildlife and Rocky Mountain Bird Observatory may be showing a bird use shift towards an association with existing USDA Conservation Reserve Program (CRP) fields. There has been much success in Kansas with interseeding native forbs and legumes into existing CRP fields and this practice has been introduced in Baca County recently by the Partners Program and other entities. In addition, grazing management practices are believed to play a critical role, and are being offered to landowners through various USDA programs and grant sources. The desired impacts of restoration are stabilization of lek site use, reduction of fragmentation pressures, and an increase in numbers of mature birds during annual surveys.

Sand-sage interseeding projects benefit lesser prairie-chicken and other high priority prairie bird species. Photo by Katy Fitzgerald, USFWS.

Sand Sage-Shortgrass Prairie Focus Area Five-year Targets

Habitat

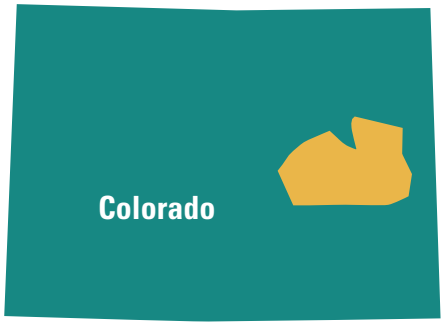
- Upland Restoration/Enhancement: 500 acres

Primary Partners

USFWS Private Stewardship Grant, USFWS Challenge Cost Share Grant, USDA Natural Resources Conservation Service, U.S. Forest Service, Colorado Division of Wildlife, Colorado Association of Conservation Districts, Rocky Mountain Bird Observatory, Playa Lakes Joint Venture, North American Wetlands Conservation Act, Prairie and Wetland Focus Area Working Group, Lesser Prairie-Chicken Interstate Working Group, Colorado Farm Bureau.

Related Plans

- North American Waterfowl Management Plan (USFWS)
- United States Shorebird Conservation Plan (USFWS)
- North American Waterfowl Management Plan (USFWS)
- North American Bird Conservation Initiative (USFWS)
- Lesser Prairie-Chicken: A Technical Conservation Assessment, USDA Forest Service
- Colorado's Comprehensive Wildlife Conservation Strategy (Colorado Division of Wildlife)
- Lesser Prairie-Chicken Recovery Plan, Colorado Division of Wildlife
- Partners in Flight (Rich et al. 2004)
- Playa Lakes Joint Venture Planning Effort (in progress)
- Prairie and Wetlands Focus Area Strategic Plan
- Southern Rocky Mountains: An Ecoregional Assessment and Conservation Blueprint, September 2001 (Neely et al. 2001)
- The Nature Conservancy Central Shortgrass Prairie Ecoregional Asssessment
- North American Grouse Management Plan (draft)
- Colorado Important Bird Areas Program



Playa wetland, surrounded by short-grass prairie. Photo by Katy Fitzgerald, USFWS.

Playa Wetlands Focus Area

The Playa Wetlands Conservation Focus Area is located in portions of El Paso, Elbert, Lincoln, Cheyenne, Kiowa, and Kit Carson counties in southeastern Colorado. This focus area is comprised of mostly shortgrass prairie habitat with some transitional areas of mixed-grass prairie along the northeastern extent. Playas are a prevalent wetland type in this shortgrass prairie ecosystem. It is estimated there are 7,500 playa basins in eastern Colorado alone, with basin size varying from 0.25 acre to 65 acres (Hutton, pers. comm. 2004). These prairie-based wetlands support a rich community of birds, mammals, amphibians, invertebrates, and plants. They also provide critical migration habitat for waterfowl and shorebirds. A sampling of the federal trust species and/or state species of concern that utilize playas includes northern pintail, ferruginous hawk, mountain plover, American avocet, long-billed curlew, plains leopard frog, black-tailed prairie dog, and massasauga (a rare rattlesnake).

Playas are ephemeral lakes located on clay soils away from stream channels in shortgrass prairie or cultivated fields. They are usually circular depressions in areas with no external drainage that are seasonally, or less frequently, flooded. Some playas may be dry for multiple years, but most playas experience several wet-dry cycles each growing season creating an unpredictable and rapidly changing hydroperiod. Plant species and plant communities in playas are adapted to this type of environment and change accordingly, which in turn influences faunal diversity. More than 340 species of plants have been identified in playas (Haukos and Smith 2003). Playas provide cover and native forage (seeds and invertebrates) important to the survival of waterfowl and other migrating and wetland dependent birds. More than 200 bird species, including waterfowl, shorebirds, and other waterbirds are known to use playas during breeding, wintering, or migratory seasons (Playa Lakes Joint Venture 2003). Playas are the primary source of recharge for the Ogallala Aquifer, and may possibly be the exclusive source of recharge (Playa Lakes Joint Venture 2003).

Most playas are found on privately owned native range and farmlands. The impacts that threaten these basins include altered hydrology, upland erosion and subsequent sedimentation, overgrazing, pesticide and fertilizer runoff, excess nutrients and/or contaminants from feedlot effluent, and oil field water dumping. Playa basins, either singularly or within a complex, pose a different restoration challenge to be addressed within the confines of landowner cooperation and land use needs. Restoration practices that are often implemented include managing livestock use via exclusion or establishment of a grazing system (fencing, alternate water source development, and rotational management), restoring hydrological function via filling livestock watering pits within the basin, and reestablishment of native vegetation both within the basin and in supporting farmed uplands. Desired biological impacts include soil loss reduction, improved water quality, improved wetland function, increased plant species diversification, improved plant structure, and increased food production (seeds, macroinvertebrates, and amphibians).

Playa restoration projects benefit a suite of shorebird species, including the American avocet. Photo by Katy Fitzgerald, USFWS.

Playa Wetlands Focus Area Five-year Targets

Habitat

- Upland Restoration/Enhancement: 450 acres
- Wetland Restoration/Enhancement: 448 acres

Partnerships

USFWS Private Stewardship Grant Program, USDA Natural Resources Conservation Service, Colorado Division of Wildlife, Colorado Association of Conservation Districts, North American Wetlands Conservation Act, Playa Lakes Joint Venture, Rocky Mountain Bird Observatory, Prairie and Wetland Focus Area Working Group.

Related Plans

- North American Waterfowl Management Plan (USFWS)
- United States Shorebird Conservation Plan (USFWS)
- North American Waterbird Conservation Plan (USFWS)
- North American Bird Conservation Initiative (USFWS)
- Colorado's Comprehensive Wildlife Conservation Strategy (Colorado Division of Wildlife)
- Partners in Flight (Rich et al. 2004)
- Playa Lakes Joint Venture (in progress)
- Prairie and Wetlands Focus Area Strategic Plan
- Southern Rocky Mountains: An Ecoregional Assessment and Conservation Blueprint, September 2001 (Neely et al. 2001)
- The Nature Conservancy Central Shortgrass Prairie Ecoregional Assessment
- North American Grouse Management Plan (draft)
- Colorado Important Bird Areas Program

San Luis Valley Ecosystem Focus Area

The San Luis Valley, spanning approximately 100 miles north to south and 60 miles east to west at its widest point, is considered to be one of the largest inter-mountain valleys in the world. It has an average elevation of 7,700 feet. Numerous high quality wetland and wet meadow habitats are found in the San Luis Valley. However, increased human development and landscape modifications have resulted in degradation and loss of wetland habitat throughout the valley. The greatest potential for wetland and wet meadow habitat restoration and enhancement activities in the San Luis Valley lies in voluntary agreements with private landowners.

The San Luis Valley is well known for its quality waterfowl nesting habitat and large numbers of nesting waterfowl. Therefore, habitat restoration and enhancement activities focus on providing such quality habitat. Focal species in the San Luis Valley Conservation Focus Area include mallard, cinnamon teal, northern pintail, white-faced ibis, American avocet, and Wilson's phalarope. Habitat restoration and enhancement provide important migration, foraging, hiding, and resting areas for these species. Other high priority federal trust species that benefit from these projects include ferruginous hawk, Brewer's sparrow, vesper sparrow, and savanna sparrow.

Wetlands throughout the San Luis Valley are critical nesting and migration habitat for many high priority waterfowl and shorebird species. Photo by Rick Schnaderbeck, USFWS.

Riparian habitat restoration and enhancement activities focus on regeneration of native vegetative communities associated with the rivers and streams in the San Luis Valley. Historic and current land use practices, such as livestock grazing, have impacted the regeneration of cottonwoods, willows, and shrubs within riparian areas throughout the San Luis Valley. Primary habitat objectives are to restore riparian areas such that they will contain a suitable mixed-age class of cottonwoods with a dense understory of willow and other shrubs. These areas provide high quality habitat for the federally listed endangered southwestern willow flycatcher.

Fencing projects help restore native prairie and manage grazing along riparian areas. Photo by Rick Schnaderbeck, USFWS.

Habitat restoration for native fishes of state concern (e.g., Rio Grande cutthroat trout, Rio Grande sucker, and Rio Grande chub) is a high priority. Of particular importance is restricting movement of non-native fish species into habitats occupied by native fish through the construction of fish movement barriers. An additional priority is removing and/or replacing detrimental barriers, such as improperly placed culverts, which may restrict access to critical habitats for native fish.

The San Luis Valley is within the Intermountain West Joint Venture. Other land management units in the area include three national wildlife refuges (Alamosa, Baca, and Monte Vista); Great Sand Dunes National Park and Preserve; Blanca Wetland Management Area, owned and managed by the Bureau of Land Management; numerous Colorado Division of Wildlife State Wildlife Areas; and The Nature Conservancy's 100,000 acre Medano-Zapata Ranch. Additionally, numerous perpetual conservation easements are held throughout the San Luis Valley by the USDA Natural Resources Conservation Service, Colorado Open Lands, Ducks Unlimited, Rocky Mountain Elk Foundation, Colorado Open Lands, and numerous local land trusts. The Partners Program works closely with agencies and organizations, such as the USDA Natural Resources Conservation Service, U.S. Forest Service, Colorado Division of Wildlife, Trout Unlimited, and The Nature Conservancy.

Priority Species

- Mallard
- Cinnamon teal
- Northern pintail
- White-faced ibis
- Sandhill crane
- Ferruginous hawk
- American avocet
- Wilson's phalarope
- Long-billed curlew
- Black-necked stilt
- Southwestern willow flycatcher (Endangered)

San Luis Valley Ecosystem Focus Area Five-year Targets

Habitat

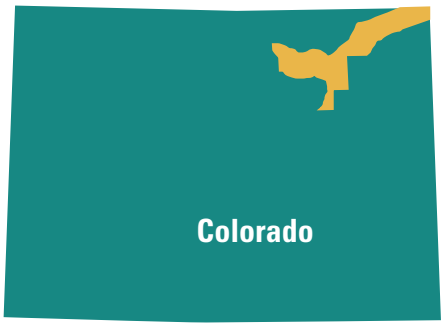
- Upland Restoration/Enhancement: 2,000 acres
- Wetland Restoration/Enhancement: 1,500 acres
- Riparian/Stream Restoration/Enhancement: 30 miles
- Fish barriers constructed: 4

Partnerships

- New landowner partners: 50
- Other partners: 10
- Amount of technical assistance: 250 staff days
- Percentage of leveraging (ratio Service to Partner): 1:4

Related Plans

- North American Waterfowl Management Plan (USFWS)
- United States Shorebird Conservation Plan (USFWS)
- North American Waterbird Conservation Plan (USFWS)
- North American Bird Conservation Initiative (USFWS)
- Southwestern Willow Flycatcher Recovery Plan (USFWS)
- Colorado's Comprehensive Wildlife Conservation Strategy (Colorado Division of Wildlife)
- Coordinated Bird Conservation Plan for Western Colorado (Colorado Division of Wildlife)
- Conservation Plan for Rio Grande Cutthroat Trout (Colorado Division of Wildlife)
- Rio Grande Sucker Recovery Plan (Colorado Division of Wildlife)
- San Luis Valley Waterbird Plan (Colorado Division of Wildlife)
- Partners in Flight (Rich et al. 2004)
- Intermountain West Joint Venture Coordinated Bird Conservation Plan
- Ducks Unlimited Colorado Conservation Plan: 2003-2010
- Southern Rocky Mountains: An Ecoregional Assessment and Conservation Blueprint, September 2001 (Neely et al. 2001)
- San Luis Valley Community Wetlands Strategy (Local)



South Platte Ecosystem Focus Area

The South Platte Ecosystem Conservation Focus Area is located in portions of Weld, Arapaho, Morgan, Logan, Phillips, and Sedgwick counties in northeastern Colorado. The floodplain and tributaries of the Lower South Platte River, along with associated uplands, are interests within the focus area. Although much of the land has been altered in the past by agricultural practices and water development, ranchers are interested in restoring these lands to benefit wildlife and increase their bottom line. Restoration of seasonal emergent wetlands and associated uplands is a primary conservation objective. Migratory waterbird and grassland bird species, along with a host of other wetland-dependent species, will benefit from these efforts. These include snow goose, Canada goose, mallard, northern pintail, American avocet, Wilson's phalarope, and northern leopard frog. Additionally, projects which include a groundwater augmentation component will also contribute to improved Platte River flows through the "Big Bend" reach in Nebraska, benefiting several species listed under the Endangered Species Act, such as whooping crane, piping plover, and least tern. Several Colorado state species of concern, such as the suckermouth, brassy, and plains minnows, will be targets for conservation. Floodplain wetland restoration, grazing system establishment (fencing, alternate water supply, rotational management) and re-seeding of native grasses and forbs will likely constitute the majority of Partners Program efforts. Identified threats to conservation include the spread of invasive noxious weeds, fragmentation due to oil and gas drilling, development, increased demand for water by municipalities, and inflation of land prices.

Priority species

- Mallard
- Northern pintail
- Mountain plover
- American avocet
- Wilson's phalarope

Spring migrants using Partners Program wetland restoration/ground water augmentation project site. Photo by Matt Filsinger, USFWS.

South Platte Ecosystem Focus Area Five-year Targets

Habitat

- Upland Restoration/Enhancement: 6,000 acres
- Wetland Restoration/Enhancement: 2,000 acres
- Riparian/Stream Restoration/Enhancement: 30 miles

Partnerships

- New landowner partners: 50
- Other partners: 20
- Amount of technical assistance: 400 staff days
- Percentage of leveraging (ratio Service to Partner): 1:4

Related Plans

- North American Waterfowl Management Plan (USFWS)
- United States Shorebird Conservation Plan (USFWS)
- North American Waterbird Conservation Plan (USFWS)
- North American Bird Conservation Initiative (USFWS)
- Colorado's Comprehensive Wildlife Conservation Strategy (Colorado Division of Wildlife)
- Partners in Flight (Rich et al. 2004)
- Playa Lakes Joint Venture (in progress)
- Ducks Unlimited: 10-year Strategic Plan for the South Platte River
- South Platte Wetlands Focus Area Strategic Plan
- Southern Rocky Mountains: An Ecoregional Assessment and Conservation Blueprint, September 2001 (Neely et al. 2001)
- The Nature Conservancy Central Shortgrass Prairie Ecoregional Assessment
- Colorado Important Bird Areas Program (in progress)
- The Platte River Recovery Implementation Program Biological Opinion
- The Platte River Recovery Implementation Program Final Environmental Impact Statement

Biological Outcomes: Colorado – South Platte Ecosystem Focus Area

The Partners Program worked with the Playa Lakes Joint Venture to model the biological outcomes of the expected five-year habitat restoration target acres for priority birds. Changes in bird abundance on each habitat type were modeled using bird densities from the literature and specific Partners Program habitat restoration and enhancement activities. Results showed a net gain or loss of priority birds from the anticipated treatments of Partners Program projects within each conservation focus area. Bird numbers expected to be supported by Partners Program projects were compared to regional bird population goals, illustrating the contribution of each conservation focus area to bird population objectives developed for the four major migratory bird initiatives (waterfowl, shorebirds, waterbirds, and landbirds).

Colorado – South Platte Ecosystem Focus Area

Species Used	Habitats Used
Mountain Plover	Cropland – Alfalfa
Shorebirds-Nonbreeding-Wetland	Cropland – Corn
Waterfowl-Nonbreeding	Cropland – Hay
	Cropland – Pasture
	Cropland – Wheat
	Mixed Grass – Few shrubs/high grass
	Mixed Grass – Few shrubs/low grass
	Other Wetlands – Emergent marsh
	Other Wetlands – Moist-soil unit
	Other Wetlands – Saline
	Playa – Dry
	Playa – Wet
	Playa – Wet pit only
	Riverine Systems – Exotic riparian shrubland
	Riverine Systems – Floodplain marsh
	Riverine Systems – Native riparian shrubland
	Riverine Systems – Riparian canopy – early successional
	Riverine Systems – Riparian canopy – late successional
	Riverine Systems – River channel
	Riverine Systems – Unvegetated sandbar
	Riverine Systems – Warmwater slough
	Riverine Systems – Wet meadow
	Sand Sage – High grass
	Sand Sage – Low grass
	Shortgrass – Few shrubs/high grass
	Shortgrass – Few shrubs/low grass

Estimated Biological Outcomes: Colorado – South Platte Ecosystem Focus Areas 2007-2011								
Species (and Habitat)	**Current Acres**	**Future Acres**	**Carrying Capacity Current**	**Carrying Capacity Future**	**Change in Carrying Capacity**	**% Goal Current**	**% Goal Future**	**Change % Goal**
Shorebirds – Nonbreeding								
Other wetlands – Emergent marsh	200.00	500.00	1,480.00	3,700.00	2,220.00	0.08	0.21	0.13
Other Wetlands – Moist-soil unit	1.00	200.00	3.89	777.00	773.12	0.00	0.04	0.04
Other Wetlands – Saline	200.00	300.00	2,220.00	3,330.00	1,110.00	0.12	0.19	0.07
Playa – Wet	50.00	200.00	370.00	1,480.00	1,110.00	0.02	0.08	0.06
Playa – Wet pit only	50.00	1.00	3.70	0.07	-3.63	0.00	0.00	0.00
Riverine Systems – Floodplain marsh	1.00	100.00	0.96	96.20	95.24	0.00	0.01	0.01
Riverine Systems – River channel	100.00	1.00	74.00	0.74	-73.26	0.00	0.00	0.00
Shorebirds – Nonbreeding Totals			**4,152.55**	**9,384.01**	**5,231.47**	**0.22**	**0.53**	**0.31**
Waterfowl – Nonbreeding (Fall)								
Other wetlands – Emergent marsh	200.00	500.00	267,200.00	668,000.00	400,800.00	2.39	5.97	3.58
Other Wetlands – Moist-soil unit	1.00	200.00	374.08	74,816.00	47,441.92	0.00	0.67	0.67
Other Wetlands – Saline	200.00	300.00	267,200.00	400,800.00	133,600.00	2.39	3.58	1.19
Playa – Wet	50.00	200.00	21,400.00	85,600.00	64,200.00	0.19	0.76	0.57
Riverine Systems – Floodplain marsh	1.00	100.00	1,336.00	133,600.00	132,264.00	0.01	1.19	1.18
Riverine Systems – River channel	100.00	1.00	5,000.00	50.00	-4,950.00	0.04	0.00	-0.04
Riverine Systems – Warmwater slough	100.00	150.00	42,800.00	64,200.00	21,400.00	0.38	0.57	0.19
Waterfowl – Nonbreeding (Fall) Totals			**605,310.08**	**1,427,066.00**	**821,755.92**	**5.40**	**12.74**	**7.34**
Waterfowl – Nonbreeding (Spring)								
Other wetlands – Emergent marsh	200.00	500.00	267,200.00	668,000.00	400,800.00	0.73	1.82	1.09
Other Wetlands – Moist-soil unit	1.00	200.00	561.12	112,224.00	111,662.88	0.00	0.31	0.31
Other Wetlands – Saline	200.00	300.00	367,200.00	400,800.00	133,600.00	0.73	1.09	0.36
Playa – Wet	50.00	200.00	21,400.00	85,600.00	64,200.00	0.06	0.23	0.17
Riverine Systems – Floodplain marsh	1.00	100.00	1,336.00	133,600.00	132,264.00	0.00	0.36	0.36
Riverine Systems – River channel	100.00	1.00	5,000.00	50.00	-4,950.00	0.01	0.00	-0.01
Riverine Systems – Warmwater slough	100.00	150.00	42,800.00	64,200.00	21,400.00	0.12	0.17	0.05
Waterfowl – Nonbreeding (Spring) Totals			**605,497.12**	**1,464,474.00**	**858,976.88**	**1.65**	**3.98**	**2.33**
Waterfowl – Nonbreeding (Winter)								
Cropland – Corn	100.00	1.00	66,800.00	668.00	-66,132.00	0.10	0.00	-0.01
Cropland – Wheat	100.00	1.00	66,800.00	668.00	-66,132.00	0.10	0.00	-0.10
Riverine Systems – Warmwater slough	100.00	150.00	42,800.00	64,200.00	21,400.00	0.06	0.10	0.04
Waterfowl – Nonbreeding (Winter) Totals			**176,400.00**	**65,536.00**	**-110,864.00**	**0.26**	**0.10**	**-0.16**

Playa Lakes Joint Veture bird habitat models were used to estimate biological performance of the anticipated South Platte Partners Program projects for a subset of priority bird species during the 5-year period.

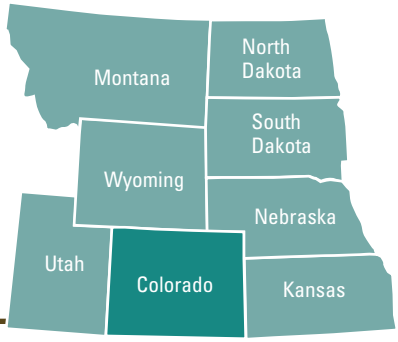
For non-breeding shorebirds, completed projects are expected to support approximately 9,384 use days, which is 0.31% of the population goal for the BCR18 portion of Colorado. Restoration and enhancement actions on these sites will improve the carrying capacity of these sites by more than 5,230 use days.

For non-breeding waterfowl (fall), completed projects are expected to support approximately 1,427,066 use days, which is approximately 7.34% of the population goal for the BCR18 portion of Colorado. Restoration and enhancement actions on these sites will improve the carrying capacity of these sites by more than 821,755 use days.

For non-breeding waterfowl (spring), projects are expected to support approximately 1,464,474 use days, which is 2.33% of the population goal for the BCR18 portion of Colorado. Restoration and enhancement actions on these sites will improve the carrying capacity of these sites by more than 858,976 use days.

For non-breeding waterfowl (winter), projects are expected to support approximately 65,536 use days, which is -0.16% of the population goal for the BCR18 portion of Colorado. Restoration and enhancement actions on these sites will reduce winter carrying capacity on these sites by -110,864 use days, due to reduction of corn and wheat on cropped fields - now restored or enhanced prairie grasses.

Colorado Statewide Goals



Improve Information Sharing and Communication

Internal Communication

- Invite other Service divisions and operational functions to participate in annual Partners Program staff meetings to foster cross-program cooperation and information exchange.
- Maintain regular communication (at least bi-monthly) with Ecological Services field supervisor and National Wildlife Refuge System zone supervisor.
- Field staff associated with a national wildlife refuge will attend refuge staff meetings at least bi-monthly and provide Partners Program updates.
- Field trips for national and regional office program managers will be arranged by the Partners Program state coordinator at least twice each fiscal year to view projects and meet cooperators.

External Communication

- Maintain, and if possible, improve the Colorado Partners Program's long-standing partnership with the Colorado Division of Wildlife.
- Continue bi-monthly meetings with the USDA Natural Resources Conservation Service State Conservationist.
- Maintain and expand Partners Program assistance and collaboration with organizations pursuing North American Wetland Conservation Act, Private Stewardship Grant, and other grant programs.
- Identify and reach out to agencies and organizations which could assist in the identification, implementation, and funding of projects within Colorado conservation focus areas. A list will be developed and maintained for each conservation focus area.
- Invite state, nongovernmental organizations, local cooperators, and landowners on field trips arranged by the Partners Program state coordinator at least twice each fiscal year to view projects and meet cooperators.
- By 2011, at least 80% of the Colorado Partners Program projects entered into HabITS will have accompanying photos.
- Each Colorado Partners Program staff member will participate in at least two workshops or meetings per year which are targeted at increasing landowner interest in habitat restoration.

Enhance Our Workforce

- All Partners Program staff will be given the opportunity to acquire a minimum of 40 hours of training each year.
  - This may include classes, conference or workshop attendance, and informational visits to other programs (offered by the Service, the state, or nongovernmental organizations).
  - Training will be targeted to accomplish two primary functions: 1) improve program operations, and 2) improve career opportunity options for staff.

- There is a need on Colorado's western slope for a Partners Program field biologist. Such a position would provide better service to existing and potential cooperators in the area.
- The Partners Program would benefit from an entry level biological technician position to assist in project management and evaluation. This position could provide a career ladder within the Partners Program.
- In accordance with the Service's Employee Performance Appraisal System, performance and special achievement awards will be used to recognize specific notable staff efforts.

Increase Accountability

- Projects will be entered into HabITS as soon as an associated Wildlife Extension Agreement, Grant Agreement, Cooperative Agreement, or similar instrument has been fully executed.
- The Partners Program state coordinator will ensure HabITS data entry is accurate and timely.
- The Partners Program will continue to cooperate with the Colorado Division of Wildlife and the Rocky Mountain Bird Observatory on the on-going wetland project monitoring and evaluation effort.
- Each Partners Program field biologist will annually inspect or monitor a minimum of 5 projects within their respective assigned conservation focus area(s).